AMENDMENTS TO THE CLAIMS

1. - 52 (Canceled)

 (New) A cross-linked polyether which is obtained by polymerizing a monomer of the general formula;

wherein

D is PEG, PPG, or poly(THF), and

C and E independently represent an electron withdrawing group, an electron releasing group, or a C_1 - C_{80} aryl.

- 54. (New) The cross-linked polyether of claim 53, wherein the electron withdrawing group is halogen, formyl, ester, amide, ketone, nitro, sulfoxide, sulfonate, nitrile, aldehyde, or ketone.
- 55. (New) The cross-linked polyether of claim 54, wherein the electron withdrawing group is alkyl acrylate or nitrile.
- 56. (New) The cross-linked polyether of claim 53, wherein the electron releasing group is selected from the group consisting of C_1 to C_∞ linear or branched alkyls, C_2 to C_∞ linear or branched aralkyls, C_1 to C_∞ aryls, ethers, and amines.
 - 57. (New) The cross-linked polyether of claim 53, wherein the monomer has the formula:

58. (New) The cross-linked polyether of claim 57, wherein the monomer has the formula:

- (New) The cross-linked polyether of claim 53, wherein the monomer is produced under Baylis-Hillman or Phase Transfer Catalyst (PTC) conditions.
- (New) The cross-linked polyether of claim 58, wherein the monomer is produced under Baylis-Hillman or Phase Transfer Catalyst (PTC) conditions.

61. (New) A method for preparing a cross-linked polyether, comprising the step of polymerizing a monomer of the general formula:

wherein

D is PEG, PPG, or poly(THF), and

C and E independently represent an electron withdrawing group, an electron releasing group, or a C₁-C₁₀ aryl.

- 62. (New) The method of claim 61, wherein the electron withdrawing group is halogen, formyl, ester, amide, ketone, nitro, sulfoxide, sulfonate, nitrile, aldehyde, or ketone.
- 63. (New) The method of claim 62, wherein the electron withdrawing group is alkyl acrylate or nitrile.
- 64. (New) The method of claim 61, wherein the electron releasing group is selected from the group consisting of C₁ to C₃₀ linear or branched alkyls, C₂ to C₃₀ linear or branched aralkyls, C₁ to C₃₀ aryls, ethers, and amines.
 - 65. (New) The method of claim 61, wherein the monomer has the formula:

$$C \longrightarrow C \longrightarrow C \longrightarrow C$$

66. (New) The method of claim 65, wherein the monomer has the formula: